

WHAT IS CLAIMED IS:

1 1. A method for rendering an image layer scene,
2 comprising the steps of:
3 (a) defining a scene of image layer elements;
4 (b) rendering the elements of the image layer scene over a
5 black background to obtain RGB components for each pixel of the image
6 layer scene rendered over black;
7 (c) rendering the elements of the image layer scene over a
8 white background to obtain RGB components for each pixel of the image
9 layer scene rendered over white; and
10 (d) combining the RGB components for each pixel of the
11 image layer scene rendered over black with the RGB components for each
12 corresponding pixel of the image layer scene rendered over white to form
13 the rendered image layer scene.

1 2. The method of Claim 1 wherein the step of combining
2 the RGB components for each pixel of the image layer scene rendered
3 over black with the RGB components for each corresponding pixel of the
4 image layer scene rendered over white includes the steps of, for each
5 corresponding pixel of the image layer scenes rendered over black and
6 white:

7 (a) determining an alpha value for the pixel as one plus
8 the value of a color component of the pixel from the image layer scene
9 rendered over black minus the value of the same color component of the
10 corresponding pixel from the image layer scene rendered over white;

11 (b) setting all of the RGB color component values of the
12 pixel to zero if the alpha value for the pixel equals zero;

13 (c) otherwise setting the RGB color component values of
14 the pixel to the corresponding color component values of the

15 corresponding pixel from the image layer scene rendered over black
16 divided by the alpha value for the pixel.

1 3. The method of Claim 2 wherein the step of
2 determining an alpha value for the pixel includes the step of determining
3 the alpha value for the pixel as one plus the value of a red component of
4 the pixel from the image layer scene rendered over black minus the value
5 of the red component of the corresponding pixel from the image layer
6 scene rendered over white.

7 4. A method for rendering a multi-layer image, comprising
8 the steps of:

- 9 (a) rendering a background image layer;
- 10 (b) saving the background image layer;
- 11 (c) creating a foreground image layer scene of foreground
12 image layer elements;
- 13 (d) rendering the elements of the foreground image layer
14 scene over a black background to obtain RGB components for each pixel
15 of the foreground image layer scene rendered over black;
- 16 (e) rendering the elements of the foreground image layer
17 scene over a white background to obtain RGB components for each pixel
18 of the foreground image layer scene rendered over white;
- 19 (f) combining the RGB components for each pixel of the
20 foreground image layer scene rendered over black with the RGB
21 components for each corresponding pixel of the foreground image layer
22 scene rendered over white to form a rendered foreground image layer; and
23 (g) compositing the background image layer and the
24 foreground image layer to form a multi-layer image.

1 5. The method of Claim 4 wherein the step of combining
2 the RGB components for each pixel of the foreground image layer scene

3 rendered over black with the RGB components for each corresponding
4 pixel of the foreground image layer scene rendered over white includes
5 the steps of, for each corresponding pixel of the foreground image layer
6 scenes rendered over black and white:

7 (a) determining an alpha value for the pixel as one plus
8 the value of a color component of the pixel from the foreground image
9 layer scene rendered over black minus the value of the same color
10 component of the corresponding pixel from the foreground image layer
11 scene rendered over white;

12 (b) setting all of the RGB color component values of the
13 pixel to zero if the alpha value for the pixel equals zero;

14 (c) otherwise setting the RGB color component values of
15 the pixel to the corresponding color component values of the
16 corresponding pixel from the foreground image layer scene rendered over
17 black divided by the alpha value for the pixel.

1 6. The method of Claim 5 wherein the step of
2 determining an alpha value for the pixel includes the step of determining
3 the alpha value for the pixel as one plus the value of a red component of
4 the pixel from the foreground image layer scene rendered over black
5 minus the value of the red component of the corresponding pixel from the
6 foreground image layer scene rendered over white.

1 7. The method of Claim 4 comprising additionally the
2 steps of providing a third image layer and compositing the background
3 image layer, the foreground image layer, and the third image layer to form
4 a multi-layer image with the third image layer appearing between the
5 background image layer and the foreground image layer in the composited
6 multi-layer image.

- 1 8. The method of Claim 4 wherein the step of rendering a
- 2 background image layer includes the step of rendering an RGB background
- 3 image layer.

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